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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,171	10/08/2003	Tom Teng	M4065.0925/P925	5786

45374 7590 05/30/2007

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EXAMINER	
MARTINEZ, DAVID E	

ART UNIT	PAPER NUMBER
2181	

MAIL DATE	DELIVERY MODE
05/30/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/680,171	TENG, TOM	
	Examiner	Art Unit	
	David E. Martinez	2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *RCE dated 3/9/07*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-17,20-22,63 and 64* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-17,20-22,63 and 64* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/15/07 has been entered.

Claim Objections

Claim 20 is objected to because of the following informalities: it currently depends from cancelled claim 19. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 13-17, 21-22, 63 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's Admitted Prior Art disclosed in US Patent Application Publication No. US 2005/0080951 A1 (hereinafter AAPA) in view of US Patent No. 5,673,396 to Smolansky et al. (hereinafter Smolansky).

1. With regards to claim 13, AAPA teaches a system of cascaded devices, comprising:

a first device [element D_i] having a first input for receiving a request signal from a first source [every element in the cascaded series of elements D_{0+1} to D_{n-1} has an input port for receiving a request signal from its previously cascaded element over bus b_i], a second input for receiving a first reply signal from said first source [every element in the cascaded series of

elements D_{0+1} to D_{n-1} has an input port for receiving a reply signal from its previously cascaded element over bus B_i], a first output for outputting said request signal [request output port in element D_i for sending a request over bus element b_i to cascaded element D_{i+1}], and a second output for outputting a second reply signal [reply output port in element D_i for sending a reply over bus element B_i to cascaded element D_{i+1} see paragraph 3];

a first buffer being coupled to said first device for receiving said outputted request signal [(CAM) device elements D_{0+1} to D_{n-1} can stall the requests thus they store the requests until needed in a buffer – see paragraph 6]; and

a second buffer being coupled to said first device for receiving said second reply signal [paragraphs 3 and 4, device elements D_{0+1} to D_{n-1} receive the result from the immediate upstream device and combines this result with its own result, the result being sent as a reply signal from the upstream device it's coupled to thus the result being stored in a buffer until combined with its own result].

AAPA teaches all of the above limitations but is silent as to the first buffer having a first programmable buffer stage depth comprising a first number of buffer stages, and the second buffer having a second programmable buffer stage depth comprising a second number of buffer stages. However, Smolansky teaches using buffers of programmable depth for the benefit of maximizing the use of a buffer [Smolansky column 2 lines 34-49 disclose the buffers can be of different depths (4 or 8 words deep)].

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of AAPA and Smolansky to have the first buffer have a first programmable buffer stage depth comprising a first number of buffer stages, and the second buffer have a second programmable buffer stage depth comprising a second number of buffer stages of maximizing the use of a buffer [Smolansky column 2 lines 34-49].

2. With regards to claim 14, AAPA teaches the system of claim 13, further comprising an output bus [output bus element(s) coupling adjacent devices D_{0+1} to D_{n-1}], said output bus being coupled to said first and second buffers and a second device [bus element(s) coupling adjacent devices D_{0+1} to D_{n-1} paragraphs 3-6].

3. With regards to claim 15, AAPA teaches the system of claim 13, wherein said second reply signal is generated from said request signal and said first reply signal [paragraph 6].

4. With regards to claim 16, AAPA teaches the system of claim 14, wherein said first buffer buffers said outputted request signal when said second device has a lower latency than said first device [paragraph 5].

5. With regards to claim 17, AAPA teaches the system of claim 14, wherein said second buffer buffers said second reply signal when said second device has a higher latency than said first device [paragraph 5].

6. With regards to claim 21, AAPA teaches the system of claim 14, wherein said first device [AAPA paragraph 5] and said second device [AAPA paragraph 5] are content addressable memory (CAM) devices [AAPA paragraph 5].

7. With regards to claim 22, AAPA teaches the system of claim 13, wherein said first and second programmable buffers are part of a same buffer unit [firs and second buffers are found within each of the device units D_{0+1} to D_{n-1} thus both are part of the same buffer unit – paragraphs 3-6].

8. With regards to claim 63, Smolansky teaches the system of claim 13, wherein the first programmable buffer stage depth is different than the second programmable buffer stage depth [Smolansky column 2 lines 34-49 discloses buffers can be 4 or 8 words deep so you could have a buffer 4 words deep and another buffer 8 words deep thus each having a different programmable buffer stage depth.].

9. With regards to claim 64, Smolansky teaches the system of claim 13, wherein the first programmable buffer stage depth is the same as the second programmable buffer stage depth [Smolansky column 2 lines 34-49 discloses buffers can be 4 or 8 words deep so you could have two buffers both 4 words deep or two buffers both 8 words deep thus each having a same programmable buffer stage depth].

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art disclosed in US Patent Application Publication No. US 2005/0080951 A1 (hereinafter AAPA) in view of US Patent No. 5,673,396 to Smolansky et al. (hereinafter Smolansky), and further in view of US Patent No. 5,956,492 to Jander et al. (hereinafter Jander)

10. With regards to claim 20, the combination of AAPA and Smolansky is silent as to the system of claim 19, wherein buffer stages in said first buffer and said second buffer may be bypassed. However, Jander teaches the use of buffers that have buffer stages that are be bypassed for the benefit of having data reach the front of the buffer faster and thus data latency or time needed for data to fall-through the buffer are minimized [column 1 lines 10-32 and lines 54-57].

It would have been obvious to one of ordinary skill in the art to combine the teachings of AAPA, Smolansky and Jander to have the buffer stages in said first buffer and said second buffer may be bypassed for the benefit of having data reach the front of the buffer faster and thus data latency or time needed for data to fall-through the buffer are minimized.

Response to Arguments

Applicant's arguments filed 2/15/07 have been fully considered but they are not persuasive.

With regards to Applicant's arguments in the remarks directed to claim 13, the Examiner respectfully disagrees.

In response to applicant's arguments against the references individually (arguments directed to Smolansky not disclosing "a first programmable buffer stage depth comprising a first number of buffer stages, and the second buffer having a second programmable buffer stage depth comprising a second number of buffer stages"), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, the Examiner relies on AAPA to teach the first and second buffers for the system and on Smolansky to teach the first and second buffers of the AAPA can have first and second programmable buffer stage depths comprising a first number of buffer stages and a second number of buffer stages respectively as per the claim rejection above.

In response to applicant's argument that "the claimed invention and the AAPA are directed at curing mis-timing of response and reply signals between devices in a system of cascaded devices. Thus the alleged motivation set forth in the office action would not result in the claimed invention", the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

In response to the applicant's arguments directed to claim 20, it appears that it currently depends from cancelled claim 19, and therefore its arguments are not persuasive.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Martinez whose telephone number is (571) 272-4152. The examiner can normally be reached on 8:30-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on 571-272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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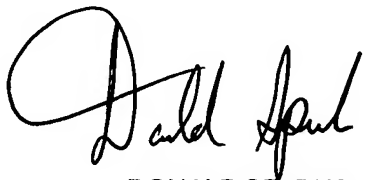

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